EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1763	(first adj vector) same (second adj vector)	USPAT	OR	ON	2006/06/30 11:54
L2	25	(closest nearest) same 1	USPAT	OR	ON	2006/06/30 11:54
L3	4713	(closest nearest) same vector	USPAT	OR	ON	2006/06/30 11:55
L4	186	3 same symbol	USPAT	OR	ON	2006/06/30 11:55
L5	186	4 not 2	USPAT	OR	ON	2006/06/30 11:55
L6	74184	constellation lattice	USPAT	OR	ON	2006/06/30 11:55
L7	186	5 same 4	USPAT	OR	ON	2006/06/30 11:56
L8	35	6 same 4	USPAT	OR	ON	2006/06/30 11:56

US-PAT-NO: 6404573

DOCUMENT-IDENTIFIER: US 6404573 B1

****See image for Certificate of Correction****

TITLE: Full and half-rate signal space detection for channels with a time-varying MTR

Detailed Description Text - DETX (12):

A three-dimensional signal space detector (3D-SSD) can be implemented by first considering a **symbol constellation** in three-dimensional space. As described in greater detail below, such a detector maps all possible **symbols** which could represent the input data sequence to the three-dimensional space. The detector then obtains a sample **vector** that includes contributions from a plurality of input samples that are each formed from a plurality of terms indicative of input data samples in the input sample sequence. The sample **vector** is then mapped to the same three-dimensional space in the **constellation**. The detector then determines which of the possible data **symbols is closest** in the three-dimensional space to the sample **vector** at each time interval. This is analogous to determining a path corresponding a minimum Euclidean distance between an observed and the desired sample values for a fixed-delay detector, such as an FDTS/DF detector, or for a look-ahead partial response channel such as that described by Patel, Rutledge and So in "Performance Data For A Six-Sample Look-Ahead 1, 7 ML Detection Channel", IEEE Trans. Magn. Vol. 29, No. 6, pp. 4012-4014, November, 1993 and that described by Yamasaki et al., "A 1, 7 Code EEPR4 Read Channel IC With Analog Noise Whitened Detector", PROC. of ISSCC, 1997, pp. 316-317.

US-PAT-NO: 6594319

DOCUMENT-IDENTIFIER: US 6594319 B1

TITLE: Apparatus and method for determining the closest coset points in a trellis decoder

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Detailed Description Text - DETX (8):

The **symbol** decoding process 50 includes a step 52 to read a received **symbol** (i.e., the **vector**) (X.sub.n,Y.sub.n) from the received **symbol** buffer (not shown). The subscript "n" is used to differentiate the received signal from the transmitted signal due to the presence of noise on the received signal. The received **symbol** buffer may be located in the transceiver 39 (FIG. 1). Step 54 is then preformed to determine the **nearest** neighbor of the received **symbol** from each coset. That is, if there are four cosets, step 54 identifies four **constellation** points, one from each coset that are **closest** to the received **symbol**. Once the **nearest constellation** point from each coset are identified by step 54, maximum likelihood sequence estimation is then preformed in step 56 to determine the received sequence.

Detailed Description Text - DETX (9):

FIG. 4 illustrates a more detailed series of steps involved in the step 54 of determining the **nearest** neighbor to the received **symbol** from each coset, according to the present invention. Step 58 is performed to determine the **constellation** boundaries and boundaries for a decode region based upon the number of bits of information. FIG. 5 illustrates a receiver look-up table 60 that defines the **constellation** limits based upon the number of bits used to define the received **symbol/vector**. FIG. 5 also identifies the boundaries that define the decode region within the **constellation** limits. The number of information bits are listed down the first column 62, and the maximum upper and lower limits of the **constellation** are defined by columns 64, 66 of the table, respectively. The boundaries of the decode region are identified in columns 68, 70.

US-PAT-NO: 6301315

DOCUMENT-IDENTIFIER: US 6301315 B1

TITLE: Methods and systems for symbol estimation in a receiver

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Detailed Description Text - DETX (21):

Generally, equalizers operate by filtering a received signal containing **symbol** information, estimating a stream of **symbol vectors,** and then mapping each **symbol vector to symbols**. The mapping process can be accomplished by equating each **symbol vector to the nearest** recognized **symbol in a constellation of symbols**. For example, in a system with four **symbols** (-1,-1), (+1,+1), (+1,-1) and (-1,-1), a **symbol vector** (0.5,1.5) maps to **symbol** (+1,+1). Likewise, the **vector** (-0.1,-0.03) maps to **symbol** (-1,-1). The mapping boundaries to the exemplary **constellation** are the axis of the **constellation** which form four quadrants representing separate decision spaces for each **symbol**.

Detailed Description Text - DETX (60):

In step 1130, **symbols** are selected by mapping the **symbol vectors** produced in step 1120 to **symbols in a symbol constellation of symbols**. In the exemplary method, the **symbols** are mapped by choosing the **symbol constellation** point **closest to the symbol vector,** however, it should be appreciated that mapping criteria can change and any mapping process that capable of translating **symbol vectors to symbols** can be used without departing from the spirit and scope of the invention. After the **symbols** are selected, the process stops in step 1140.